


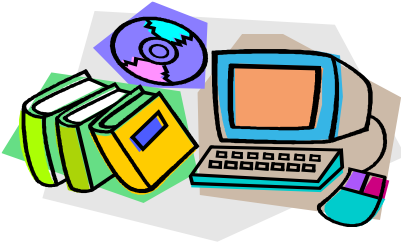


**PROFESSIONAL DEVELOPMENT TOOLKIT
FOR NEW AND BEGINNING TEACHERS**

TECHNOLOGY USE AND INTEGRATION

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PROFESSIONAL DEVELOPMENT TOOLKIT FOR NEW AND BEGINNING TEACHERS

A project administered by

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Professional Development Toolkit for New and Beginning Teachers



The PROFESSIONAL DEVELOPMENT TOOLKIT FOR NEW AND BEGINNING TEACHERS is a research-based video streamed program with accompanying resource documents. The program is an outgrowth of a previous Commonwealth Educational Policy Institute (CEPI) online mentoring study at Virginia Commonwealth University. The findings of the online mentoring study revealed twelve topics new and beginning teachers felt additional university training would have led them to more effective use of best practices in the classroom. In this program, each of the twelve topics is presented in two to six stand alone video segments. The total number of segments is forty five. Suggested uses, in addition to personal viewing by K-12 teachers for self improvement, include professional development, mentor and mentee, university prospective teacher, and small or large group training.

The facilitators are university faculty and practitioners with field experience. Each is currently involved in teacher training or serves as a staff development administrator. All are currently engaged in educational research, teaching and/or educational policy development.

The teachers in the video programs are classroom teachers. Some of them were participants in the 2006 Online Mentoring Study in which the topics for this project were identified. They represent all disciplines in K-12 grades.

Resource documents for the programs are provided as PDF files to facilitate the use of the 45 video segments. The first set of documents is composed of: (1) a description of the project, (2) an introduction to program facilitators, including a definition of each topic, and a list of the video segments, and (3) a research formative study summary that helped to guide the project's development. The second set of documents is composed of: (1) a description of the project, (2) a full text transcript for each video segment, (3) a set of problems and solutions related to each video segment in the form of a work-study guide, and (4) an annotated bibliographic summary of references and Internet links for each transcript. Many of the organizations and agencies referenced in the transcripts are actively involved in the development of video and professional development presentations that support policy and advocacy.

Every reasonable effort is made to present current and accurate information. Internet content, however, does appear, disappear and change over time. CEPI, as a university-based educational policy research institute endorses no specific position of any listed group.

TECHNOLOGY INTEGRATION

SEGMENT #3: TECHNOLOGY AS A RESEARCH TOOL

VIDEO SEGMENT TRANSCRIPT

Technology Use and Integration: Ability and skills necessary to make use of technology as an instructional and evaluative tool to assist the development of such skills as critical thinking, test taking, and problem solving.

Facilitator: Dr. [Bill Boshier](#), Jr. Distinguished Professor
Educational and Government Leadership and School Improvement
Virginia Commonwealth University

AUDIO	VIDEO
<p>The effectiveness of educational technology on student learning depends not only on what outcomes are targeted and how the technology is integrated into instruction, but also on how teachers assess student performance in classrooms and adjust instruction accordingly. New teachers find it particularly helpful to use information from assessments to make classroom decisions and provide the best possible instruction for student learning so that all students succeed.</p> <p>I am Bill Boshier, Executive Director of the Commonwealth Educational Policy Institute and VCU Distinguished Professor of Public Policy and Education. In this segment let's examine how teachers use emerging technologies as instructional tools.</p> <p>Technology offers you a broad range of tools to collect and analyze data, and richer sets of student data to guide instructional decisions.</p> <p>Recent research by EDC's (Educational Development Center) Center for Children and Technology found that teachers tend to use multiple sources of data-homework, assignments, in-class tests, classroom performances, and experiential information-to inform their thinking about their student's strengths and weaknesses.</p> <p>Effective teachers use data daily to support their decisions. One of the most important aspects of good teaching, as many teachers know, is the ability to discern which students are learning and which are not, and then to tailor instruction to meet individual learning needs.</p> <p>Research also suggests that teachers examine those factors that contribute to individual patterns of behavior and think case-by-case to analyze the relationship between student performance and instructional strategies and materials. Technology plays a vital role in enabling data-driven decision-making. Web-based test data reporting systems provide an interface with testing results by organizing raw data into information that is aligned with state standards. Many teachers use mobile computing devices, such as handhelds (PDAs) to</p>	<p>DR. BOSHER</p>

administer and analyze the data of classroom-based assessments..

Teachers who use student test performance to guide and improve their teaching are more effective than teachers who do not use such information. For example, one study demonstrates that achievement in mathematics for low-performing students accelerated when teachers received weekly summaries and performance graphs of their students' performance.

Let's join a conversation with our teachers as they discuss the value of information technology for gathering, reporting, and analyzing comprehensive information about student learning progress.

I'm Emily Hedstrom, and I've been teaching for one year. I teach 6-8th grade social studies. Of course there are many levels of assessment, and some of the simplest of subjective assessments are made easy through use of technology. I find that using my blog as a tool to have students respond to material-related questions allows me to see in a sentence or two whether they grasp the deeper concept or only have a basic understanding. Also, their comments to my blog posts reveal students who easily think beyond the realm of basic understanding. It's exciting to be able to recognize that, and to allow their peers to read examples of well-written responses. Students can weigh the appropriateness and effort-level of their own post against their peers', which allows them to self-assess.

Objective assessment tools are also important, and the ExamView program that my school division uses makes it easy to evaluate each student. After students take their assessment on their computers, the data arrives on my computer. I can then sort it by Standard of Learning strand to search for individual and class strengths and weaknesses. It's helpful to be able to see which questions each student missed. The program allows me to easily manipulate the data to reveal specific information I may need to re-teach.

My name is Allison Sapp. I am a middle school math teacher. I have taught for 1 year. One of my favorite technologies for data analysis is Exam View. Exam View helps me conduct an immediate item analysis of my students' performance as a group and as individuals. Immediate feedback of technical input errors, percentages, Standards of Learning and classroom diagnostic and remediation information is extremely valuable for individual instruction and learning. What pleases me most is that we now have technologies that help reduce the time a teacher spends completing necessary paperwork and administrative tasks.

Many of us are immigrants to technology, and you are natives. But, the young people with whom we work don't know a different world. They're text messaging, emailing, instant messaging, and googling. That's life and we need to make sure that schools are real for them.

EMILY HEDSTROM

ALLISON SAPP

DR. BOSHER

Ask yourself:

How am I using technology personally? How do I incorporate technology into my teaching? What new techniques do I want to try in the future?

Suggested use for this module:**1. Analyze:**

Please select one of the scenarios below and problem-solve a list of possible solutions. Record your ideas in the space provided. Discuss these ideas with your other educators (mentor, colleagues, or other beginning teachers).

2. View:

Watch the corresponding video on this topic. How does this information change your ideas?

3. Compare:

Revisit the scenario selected. Next, review the section entitled, "Possible Solutions" comparing the ideas listed with your own list.

4. Reflect:

How will you apply this new information to your current or future classroom? What goal will you set to help you begin to change your practices? What support is needed to help you accomplish this goal?

5. Apply:

List the first step towards change below. Create a timeline for success and place deadlines in your personal planner as a reminder. How will you know when you have met your goals?

Scenarios 1 & 2: Technology Use and Integration**Scenario 1**

Don: "My students are all technology natives using digital materials in almost every aspect of their lives. They use technology for text messaging, viewing websites and movies, downloading music, playing video game systems, and researching for their homework assignments. I find it challenging to incorporate less paper and more technology into my classroom. I feel that there is a disconnect between my students and my teaching methods."

How does Don's classroom compare with your own teaching experiences?

Scenario 2

Susan: "I love using multimedia in my classroom. I am currently using digital tools to take digital field trips on my content and for student's to publish their writing. Student's also complete literature circles on the classroom laptops, discussing the novels we have been reading. Although my students enjoy these activities, I would like to try something new for my next teaching unit."

What ideas do you have for Susan to try? How does your classroom compare with her methods?

Circle the scenario that you selected below:

Scenario 1

Scenario 2

Record a list of your own possible solutions here:

Summary & Goal Setting:

POSSIBLE SOLUTIONS

Integrating technology into your teaching will enhance learner engagement and improve understanding of content knowledge. Use digital tools to share knowledge and link learning with real-world experiences in real-time formats. Technology is a useful tool for teaching students to solve problems for themselves, improving interactions with others with diverse backgrounds, and tracking learning across time.

Teacher Time-Saving Solutions:

- Utilize email to increase the speed of communication and improve your access to information.
- Convert paper processes to digital processes to eliminate administrative bottlenecks
- Scan copies of student work to create e-portfolios and to share progress with families
- Use presentation software to create countdown clocks, test reviews in game show formats, and provide visuals during instruction.

Integrating Technology into Instruction:

- Encourage students to chat about content or key ideas on your teaching unit in a shared classroom forum (word processing, internet)
- Teach students to use technology to display, gather, and analyze information (Possible tools: webs and organizers, word processing, databases, and spreadsheets)
- Encourage students to work in cooperative groups to share information (presentation software)
- Create classroom outlines, idea maps, storyboards, and graphic organizers (word processing, software)
- Incorporate electronic fieldtrips to virtually visit places of study (internet)
- Seek information to unanswered questions (Research and information retrieval, search engines)
- Design a WebQuest for inquiry-oriented learning (internet)
- Organize student presentations and group work (word processing, presentation software)
- Collaborate with other students learning about the same topic (internet, word processing, video)
- Utilize digital cameras to:
 - ✓ take photos of class experiences and write about them
 - ✓ use photos for graphing or sequencing activities
 - ✓ inspire creative writing
 - ✓ create an alphabet book which summarizes key learning in any subject area
 - ✓ email as an attachment for families in a good news message
 - ✓ insert photos as newsletter illustrations
 - ✓ build vocabulary for all learners (especially ELL students)
 - ✓ to compare different ecosystems or habitats

- ✓ teach specific skills (such as simile and metaphors)
- ✓ create a brochure or power point for a unit of study

Most school divisions have technology specialists who can co-teach or share teaching resources. Find out who serves in this capacity in your building and request support!

ANNOTATED RESEARCH BIBLIOGRAPHY

- ❖ Mentors need to remind beginning teachers to not underestimate the amount of work involved in making technological transitions both for themselves and for their students.

Runge, A.: Speigel, A.: Pytlik, L.: Dunbar, S.: Fuller, R., Sowell, G. & Brooks, D. (1999). *Hands-on computer use in science classrooms: The skeptics are still waiting*. Journal of Science Education and Technology, 8(1), p.33-44.

- ❖ Research points to time as the major instructional concern. The technological learning curve has a huge time component. Mentors should try to help new teachers make realistic time estimates for learning or teaching. Many new technology and have them be prepared to let go of some other parts of their curriculum or instructional activities.

Niguidula, D. (1997). *Picturing performance with digital portfolios*. Educational Leadership, 99(3), p. 26-29.

- ❖ It is essential that new teachers take time to survey and evaluate the potential that specific Internet sites offer. Technology has its quirks and breakdowns, and access may not be available on demand or on the class's schedule; mentors may need to remind new teachers to include alternatives in their lesson planning just in case problems arise.

Mistler-Jackson, M. & Songer, N. (2000). *Student motivation and internet technology: Are students empowered to learn science?* Journal of Research in Science Teaching, 37(5), p. 459-479.

- ❖ The RAC (research, analysis, and communication) model is an instructional framework for integrating technology into the curriculum through lesson planning and assessment across subjects and grade levels.
 - Research: students gather information from various sources
 - Analysis: data analysis depends upon the results of the research
 - Communication: students prepare products to share their results

Bowens, E. M. (2000). *Meeting standards with technology*.. Retrieved October 18, 2007, from www.iste.org

- ❖ Research suggests that teachers identified the following benefits of RAC- based (research, analysis, and communication) lesson planning:
 - It allows for more student-centered learning.
 - Students engage in more critical thinking.
 - Material can be integrated across subject areas
 - It is easily incorporated into performance-based classrooms.
 - Students are required to apply important skills in a meaningful context.
 - It provides opportunities to evaluate students' work.

Bowens, E. M. (2000). *Meeting standards with technology*. Retrieved October 18, 2007, from www.iste.org

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